he told me of a "change of heart" in his frontal sinus work—he was becoming less radical. I have never done an unmodified Killian, and never expect to do one, but I would not fail to give Doctor Killian much credit for his contribution to surgery of the frontal sinus.

Max Halle's extranasal frontal rather appeals to me. I have seen him do several, and have done one or two under his direction, and still use a modification of his technique in most of my chronic frontals. Free drainage and ventilation of the frontal sinus is the objective, but different surgeons have different successful ways of obtaining this objective.

Doctor Friesen is to be congratulated upon his judgment in the selection of the Lothrop technique in these three cases. Results are convincing. To my mind the last of the three especially emphasizes the type of case calling for the Lothrop operation.

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DOCTOR FRIESEN (closing)—I agree with Doctor Sewall that local anesthesia supplemented with scopolamin and morphin should be used whenever feasible. It is the anesthetic of choice in all nasal and sinus surgery because it facilitates better technique.

I wish to express my appreciation to the gentlemen who have so kindly discussed my paper.

SYPHILIS—ITS NON-SPECIFIC TREATMENT*

By MERLIN T.-R. MAYNARD, M. D.
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DISCUSSION *by Harry E. Alderson, M. D., San Francisco; Victor G. Vecki, M. D., San Francisco; Merrill W. Hollingsworth, M. D., Santa Ana.*

FEELING secure in the possession of arsphenamin, bismuth, and the newer associated antisyphilitics, it is unfortunate that we forget that this age-old disease was once successfully treated in many instances by largely non-specific methods. These non-specific methods, old and new, should be kept in mind when treatment with the so-called specific therapeutic agents seems to meet with failure. It may be that we should name the non-specific measures as "paraspecific," for they should be used along with the directly treponemicidal treatment.

SPECIFIC THERAPY NOT ALL-SUFFICIENT

I am speaking now in this sense with no idea of replacement of the specific bulwark of our armamentarium, but more to bring to the mind of the general practitioner of medicine that he should not be contented solely with specific therapy. Such a practitioner soon finds his first Wassermann-fast case and, after much treatment and a series of discouraging Wassermann reports, has no other method of attack and is finally deserted by a patient from whom faith in medical help has fled. I do not here speak of those patients who become permanently negative after one or two courses of the specifics, but of those hopeless, prolonged, recurrent cases, with or without cerebral or spinal involvement, who resist course after course of efficient therapy until both the patient and the doctor are equally discouraged. Too much contact with the course system of treatment blinds the physician to individualization, and too much individualization leads to the neglect of the specific "edge" of our therapy.

The treatment in the absence of definite contraindication must always be specific, but the individual's reactions are the non-specific problem. We also have little need of such aids in the primary and secondary stages of the disease, for the spirochetes are largely available through their intimate contact with the circulation. In these stages the massive infiltrations are not present, and it is only after the mobilization of the cellular elements with the co-existing reduction of the caliber of the blood vessels, that iodids and fever and other infiltration-lytic agents must be used in order that our poisons may reach the spirochetes.

TREATMENT IN RESISTANT CASES

In the well-established resistant patient we may first use the non-specific properties of the specifics. In the first place, change the method of attack. Give the arsphenamin intramuscularly, preferably in the form of sulpharsphenamin, this choice being made to take advantage of the resultant tissue irritation which induces a generalized leukocytosis. Bismuth can be given in the same site because of the better absorption due to the local hyperemia. We can have the patient use his mercury in the form of rubs, but should also have him employ a masseur to give massage to the whole body for a similar leukocyte and circulatory stimulation. In the rest period he should receive an adapted form of the following measures, which aim not at a poisoning of the spirochete in the tissues by lethal doses of arsenic, but toward the destruction, or the control of this invading organism by the natural defenses of the body. Such defenses are heat (called fever), the action of the phagocytes, and the antibodies of the tissue fluids.

Many of the older and a few of the present syphilologists would condemn the giving of any treatment of a specific nature before the Wassermann reaction had become positive, and in pre-Wassermann days, before the secondary symptoms had developed. They support this stand by the assertion that it is not until this time that the antibodies have developed and the natural defenses of the body are operating, and if specific therapy be given before this time the immune phenomena are prevented and the infection becomes more deeply seated in the organism.

FEBRILE REACTION TREATMENT

The other methods that can be used are the stimulation of a febrile reaction by the introduction into the body of a foreign protein, as originally suggested by Wagner von Jauregg, and in which tuberculin, typhoid vaccine, gonorrheal vaccine, or other febrile stimulants are injected to produce high temperatures in the body. The same author also suggested the inoculation of the patient with malaria, following which he be allowed to

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* From the Skin Clinic of Dr. H. E. Alderson, Stanford University Medical School, San Francisco.

* Read before the Dermatology and Syphilology Section, California Medical Association, at the Fifty-Sixth Annual Session, April 25-28, 1927.

have twelve or more chills before the disease is stopped with quinin. This method is now in general use with patients who have no contraindications, such being myocarditis or other severe organic disease, and sensitization to quinin. Fever can also be produced by the external application of heat, the best controlled method being the use of the prolonged hot bath.

Shamberg and Rule have recently demonstrated the possibilities of this method in experiments on rabbits. A definite strain of spirochete was subjected to heat on the water bath before inoculation into the rabbit's testicle. Infection did not take place even though the organisms were still motile. The organisms in question were kept at a temperature of 104 degrees for twenty minutes, and this repeated on a number of days. This temperature is, of course, often found in malaria. These same authors have other experiments in progress in which they are subjecting patients to hot baths to produce temperatures up to 102 degrees F. and suggest that it may be found that a hot bath can become a measure in prophylaxis as well as treatment. In rabbits, virulent strains failed to infect if a bath to produce a temperature rise of 104 F. in the animal was given three to four days after inoculation.

TONIC THERAPY

Leukocytes may be increased by the intramuscular injection of turpentine in oil, or the use of milk in a similar way. These injections should be given on the same day with salvarsan; or six to ten injections should be given in the rest period or immediately preceding specific therapy.

The use of rest, fresh air, good food, and the general practices of good hygiene are important. General tonics are advisable, the patient often doing well on a cod-liver oil mixture or a dietary stimulant such as the old elixir of iron, quinin and strychnin. The use of the cacodylates is subject to question and, if used at all, should be given intramuscularly. In such a method of administration one gains a leukocyte producing irritation and avoids the lytic action on the red blood cells that occurs in the intravenous method. A further advantage of this method is that the spirochete is not exposed to frequent non-lethal doses of arsenic, and the same danger of the production of arsenic-fast strains is not present.

IN CONCLUSION

In closing I would say that we should not forget that the patient has a resistance mechanism of his own to be considered, and we must take advantage of it if the patient is to receive full justice in the treatment of his syphilis. We see this commonly in our clinical work and at the Stanford University Medical School. We have learned that patients with bone lesions, recurrent eruptions, persistent chancres and other bugbears of the syphilologist who return over and over for specific therapy without appreciable change in their condition are those that demonstrate to us the need of adjuncts of a non-specific nature if we are to hope for appreciable improvement in them; and we believe that, although not all such patients respond favorably, the results obtained thoroughly justify the further use of paraspecific measures.

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DISCUSSION

HARRY E. ALDERSON, M. D. (490 Post Street, San Francisco)—Doctor Maynard has discussed in an interesting manner a very important phase of the treatment of syphilis. All who have had much experience with this disease appreciate fully the importance of auxiliary non-specific treatment designed to improve the patient's resistance and aid in the production of antibodies. This auxiliary treatment includes the use of physiotherapy as well as various so-called tonic medicines. Too often only routine injections of the arsphenamin, bismuth and mercury are used and no attention paid to underlying unfavorable conditions delaying return to good health. The eradication of a streptococcus focus is apt to be followed by more definite results from the antisyphilitic therapy. We have seen so-called "Wassermann-fast" cases change very definitely for the better after surgical removal of foci of infection. Of course in such cases the question always arises whether or not the operation brought about conditions analogous to what follows protein "shock therapy." Nevertheless it is well worth while to bear this matter in mind in the treatment of persistent Wassermann cases. Naturally we always suspect the presence of some hidden spirochetal focus, but in spite of very careful cardiovascular and cerebrospinal investigations and other examinations, we have to make diagnoses of "latent" or "asymptomatic" syphilis only too often.

It is in these resistant cases that various "nonspecific" remedies offer some hope of stimulating improvement. For years at the Stanford Skin and Syphilis Clinic we have been teaching our students that the treatment of syphilitics *must be individualized.* In the handling of these asymptomatic cases is this particularly true.

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VICTOR G. VECKI, M. D. (516 Sutter Street, San Francisco)—Any syphilologist of any experience will readily subscribe to every word of Doctor Maynard's timely and able paper.

It contains irrefutable truths that bear repetition and which can never be sufficiently emphasized.

In the last century Sigmund, Fournier and others repeatedly stated that, while a hygienic mode of living is good for everybody, it is imperative for anyone afflicted with syphilis. We are still unable to state with absolute security that any given case of syphilis is really cured, but we have in the Wassermann reaction and its modifications, mainly, however, in the Verne reaction, valuable aids in determining what should be done in every individual case of syphilis.

Physiotherapy in its various forms, the various foreign proteins, even Zittmann's decoction, may be of help, and it can never be emphasized enough that iodids must never be forgotten.

Obviously it must not be overlooked that a person afflicted with syphilis may also suffer from some other ailment.

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MERRILL W. HOLLINGSWORTH, M. D. (409 First National Bank Building, Santa Ana)—Doctor Maynard has opportunely brought to mind a very important but frequently neglected side of syphilotherapy. I have used daily hot baths on three patients, attaining a mouth temperature of 104 degrees F. in two patients and 106 degrees F. in one patient. The duration of the baths was twenty minutes, and they were continued for eleven days in each case. No helpful effect on the course of the disease was observed. Joseph

Schumacher of Berlin attributes the benefit derived from foreign protein injections not to the heat produced, but to the proliferation of lipoproteolytic enzymes; and he further states that a lipoid-albumin mixture must be used as an antigen, since his experiments show that injection of a pure protein to be devoid of beneficial action.

Doctor Maynard mentions injecting proteins and the arsphenamins the same days. Many prefer to inject the proteins on days in between the arsphenamin injections. While at Vienna I was entirely won over to malaria therapy as there administered. They are using it as an experiment in all stages of syphilis, but the fever has not the lethal action on the spirochetes as suggested by Shamberg's work. Moist lesions still teem with spirochetes at the end of a course of twelve febrile paroxysms. Injections of bacterial proteins are followed by more severe reactions than animal proteins. I have used typhoid vaccine intravenously with good result.

THE LURE OF MEDICAL HISTORY

BOERHAAVE

By JEAN OLIVER, M.D.
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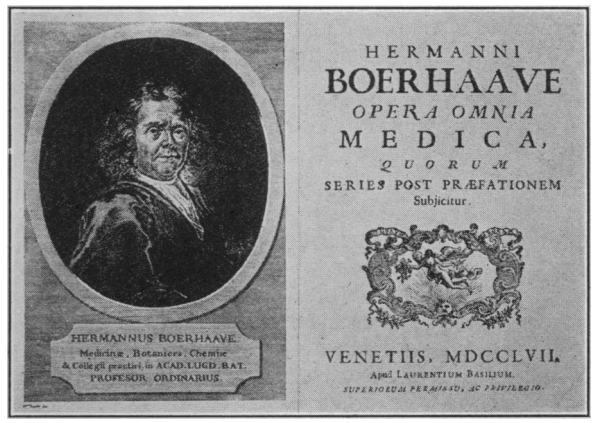
TO them it was no temporary armistice—no breathing space between the heats of battle. Victory seemed complete and the way open to any heights that they, the supporters of the New Knowledge, might care to ascend. The old captains had indeed fallen—Paracelsus, Vesalius—but the inspiration of their leadership remained—to follow the courses which they had laid out could lead to only achievement.

Perhaps it was that the victory appeared too complete—nothing remained apparently of the Hippocratic-Galenical School but an historical memory, and as they stood on the threshold of the 17th century, it seemed that they at last had reached a resting place where they might count up, distribute and enjoy the fruits of their predecessors' efforts.

In this attitude they were not alone. They saw the vast "matériel" which the world had gained since the re-birth of knowledge worked and moulded into the edifice of Philosophy by Locke and Spinoza. How can we, wise only in the wisdom of their failure, judge them if they too wished to see Medicine a completed and organized member of the establishment of science? For man is a feeble creature, slow to learn, handicapped as he is over the rest of God's creatures by the fatal gift of reason, which can lead him from the straight and narrow way of experiment into the devious ways of ratiocination. The taste of the fleshpots of medieval dialectic still filled their mouths and they sighed again for the comforting logic of a summa—a unity of knowledge, complete in and of itself, all-embracing and final.

And so appeared Hermann Boerhaave. It would be difficult to imagine one more suited to the task. The son of an erudite minister, he received the customary training in the classics including theology. The decision to enter medicine rather than the ministry was as much the result of his acquirement of a reputation as a follower of the free-thinker Spinoza which barred the latter course to him than of actual choice. But once on the path



his progress was rapid, Professor of Medicine, then Rector of the University of Leyden, finally filling four chairs at once, those of Theoretical Medicine, Practical Medicine, Botany, and Chemistry. Pupils flocked from all Europe and even Asia to sit at his clinics. And here, to give proper credit, was an innovation which we owe largely to him. Leyden became the center of medicine, not only for those who would learn but also for those who would be healed. Dukes and princes waited for his consultations; even Peter the Great on his journey through Europe interrupted his itinerary to spend an evening with the Prince of Clinicians. For such he was as no one before or since has ever been.

His manner with patients must have been remarkable indeed. An English nobleman gave him a complete country estate for the advice that he take some exercise—not given of course in such words, but in a complicated description of the proper method of rowing that would be beneficial to this particular patient, elaborately interlarded with classical erudition and theory. His numerous letters to the ailing great ones that consulted him for their troubles are remarkably devoid of any positive advice in the line of treatment, but full of long-winded régimes that nevertheless seemed impressive to the times. They have been preserved for us, along with almost every casual remark of the Great Physician by Van Swieten, whose stenographic gatherings are such a marvel of completeness as would have made a Boswell jealous.

Not only was his local fame as a clinician tremendous, but also his renown as a scientist. His "orations," which are numerous, are filled with his desire to combine medicine with science. He is credited with the introduction of the thermometer into clinical use. He praises experimentation as the source of all knowledge and yet in all his career we have a record of only one use of the method. He observed that a dog and cat survived the heat of an oven in which he placed them longer than did a sparrow! But who would find time for grubbing in Nature's vitals when Kings waited to be healed, students to be inspired, "Orations" and "Institutes" to be written—all pursuits properly recompensed by honors, adulation and, not to be